PERMIT TO CONSTRUCT

SUMMARY

A/N's 501261 and 502816 are for modification to the wastewater treatment system (P9S1 and P9S2). These modifications involve connecting the oil/water sump (D339) to the existing P9S2 control device (C521). Additional administrative changes being incorporated into this permit action include adding retention tanks Dx, Dy and Dz to the permit; changing the equipment ID for D813 from Tk-1603 to Tk-1611; removing the Rule 1176 VOC limit from C830; and changing the C719 and C720 diameter from 4 in to 10 in.

COMPANY INFORMATION

Company Name: ConocoPhillips Company, Facility ID No. 800362

Mailing Address: 1520 E. Sepulveda Blvd., Carson, CA 90745

Equipment Location: 1520 E. Sepulveda Blvd., Carson, CA 90745

Contact Person: Marshall G. Waller, (310) 952-6240

EQUIPMENT DESCRIPTION

Table 1 shows the proposed Section H permit description for the wastewater treatment system (P9S1 and P9S2). Additions to the description are noted in underlines and deletions are noted in ~~strikeouts~~.

Table 1. Permit Equipment Description
SECTION H: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

Equipment	ID No.	Conn To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 9 : WASTEWATER TREATMENT					P13.2
System 1 : STORM/PROCESS UNIT WASTEWATER TREATMENT					S13.6
OIL WATER SEPARATOR, NO. 1, OIL/WATER, WITH A FIXED COVER A/N ~~325732~~ 501261 ~~‡ Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D336	C719		**HAP**: (10)[**40CFR 63 Subpart CC, #2, 6-23-2003**] ; **VOC**: 500 PPMV (5)[**RULE 1176, 9-13-1996**]; **VOC**: 500 PPMV (8) [**40CFR60Subpart QQQ, 10-17-2000**]	H23.13
SCRUBBER, PACKED COLUMN WITH PALL RINGS, WATER OR WASTEWATER (ONCE THROUGH), HEIGHT: 8 FT; DIAMETER: 10~~-4~~ IN A/N ~~325732~~ 501261 ~~‡ Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	C719	D336 C519			C8.6

Equipment	ID No.	Conn To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
OIL WATER SEPARATOR, NO. 2, OIL/WATER, WITH A FIXED COVER A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D337	C720		**HAP**: (10)[**40CFR 63 Subpart CC, #2, 6-23-2003**] ; **VOC**: 500 PPMV (5)[**RULE 1176, 9-13-1996**]; **VOC**: 500 PPMV (8) [**40CFR60Subpart QQQ, 10-17-2000**]	H23.13
SCRUBBER, PACKED COLUMN WITH PALL RINGS, WATER OR WASTEWATER (ONCE THROUGH), HEIGHT: 8 FT; DIAMETER: 10-~~4~~ IN A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	C720	D337 C520			C8.6
SUMP, PUMP STRUCTURE, NO. 3, STORM/PROCESS WATER, CONCRETE WITH FIXED COVER AND FLAME ARRESTOR A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D338	C521 D773		**HAP**: (10)[**40CFR 63 Subpart CC, #2, 6-23-2003**] ; **VOC**: 500 PPMV (5)[**RULE 1176, 9-13-1996**]; **VOC**: 500 PPMV (8) [**40CFR60Subpart QQQ, 10-17-2000**]	H23.13
SUMP, OIL AND WATER, FIXED COVER, WIDTH: 5 FT; DEPTH: 6 FT 7 IN; LENGTH: 10 FT A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D339	C521			H23.13
SUMP, PROCESS WATER, CONCRETE WITH OPEN TOP, WIDTH: 15 FT; DEPTH 8 FT 6 IN; LENGTH: 15 FT A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D340				
SUMP, STORM WATER, CONCRETE WITH OPEN TOP, WIDTH: 15 FT; DEPTH: 8 FT 6 IN; LENGTH: 20 FT A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D341				
TANK, AIR FLOATATION, TK-1601, PROCESS WATER, FIXED ROOF, HEIGHT: 16 FT; DIAMETER: 26 FT A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D342	C517		**VOC:** 500 *PPMV (*5)[**RULE 1176, 9-13-1996**]	
TANK, AIR FLOATATION, TK-1602, PROCESS WATER, FIXED ROOF, HEIGHT: 16 FT; DIAMETER: 26 FT A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D344	C517		**VOC:** 500 PPMV (5)[**RULE 1176, 9-13-1996**]	
RESERVOIR, STORM WATER, WITH A 21 FT. DIKE, 193000 BBL A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D345				

Equipment	ID No.	Conn To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
SCREEN, CLASSIFYING, STEEL BAR TYPE, DR-4201, HEIGHT: 4 FT, WIDTH: 3 FT, MANUALLY CLEANED A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D346				
CARBON ADSORBER, (THREE IN PARALLEL), ACTIVATED CARBON, 150 LBS A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	C517	D342 D344			D90.1, E128.1, E153.2
CARBON ADSORBER, ACTIVATED CARBON, 150 LBS A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	C519	C719			D90.3, E128.1, E153.2
CARBON ADSORBER, ACTIVATED CARBON, 150 LBS A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	C520	C720			D90.3, E128.1, E153.2
TANK, AIR FLOATATION, TK-16110~~3~~, STORM WATER, FIXED ROOF, HEIGHT: 16 FT; DIAMETER: 26 FT A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D813				
SUMP, API INLET BOX, STORM/PROCESS WASTEWATER, CONCRETE, FIXED COVER, WITH VAPOR PATH COMMON TO INLET CHANNEL & PUMP STRUCTURE A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D773	D338 C521		**HAP**: (10)[**40CFR 63 Subpart CC, #2, 6-23-2003**] ; **VOC**: 500 PPMV (5)[**RULE 1176, 9-13-1996**]	H23.13
SCREEN, CLASSIFYING, WIRE MESH TYPE, 1-1/2 INCH OPENINGS, HEIGHT: 4 FT; WIDTH: 3 FT, MANUALLY CLEANED A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D774				
SCREEN, CLASSIFYING, WIRE MESH TYPE, 1-1/2 INCH OPENINGS, HEIGHT: 2 FT 8 IN; WIDTH: 3 FT 4-1/2 IN, MANUALLY CLEANED A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D775				
TANK, FIXED ROOF, TK-2529, API SLUDGE, 143 BBL; DIAMETER: 10 FT; HEIGHT: 11 FT A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D829	C830		**VOC:** 500 PPMV (5)[**RULE 1176, 9-13-1996**]	

Equipment	ID No.	Conn To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
CARBON ADSORBER, ACTIVATED CARBON, 2 TOTAL IN SERIES, 150 LBS A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	C830	D829		~~**VOC:** 500 PPMV (5)[**RULE 1176, 9-13-1996**]~~	D90.3, E128.1, E153.2
VESSEL, RETENTION, PRESSURIZED, V-2346, 69 BBL; DIAMETER: 6 FT; HEIGHT: 13 FT 10 IN A/N 501261 Permit to Construct Issued: TBD	DX				
VESSEL, RETENTION, PRESSURIZED, V-2347, 69 BBL; DIAMETER: 6 FT; HEIGHT: 13 FT A/N 501261 Permit to Construct Issued: TBD	DY				
VESSEL, RETENTION, PRESSURIZED, V-2381, 69 BBL; DIAMETER: 6 FT; HEIGHT: 13 FT A/N 501261 Permit to Construct Issued: TBD	DZ				
DRAIN SYSTEM COMPONENT A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D887			**HAP**: (10)[**40CFR 63 Subpart CC, #2, 6-23-2003**] ;	H23.13
FUGITIVE EMISSIONS, MISCELLANEOUS A/N ~~325732~~ 501261 ~~† Permit to Construct Issued: 08/31/95~~ Permit to Construct Issued: TBD	D945				H23.1
Process 9 : WASTEWATER TREATMENT					P13.2
System 2 : AIR POLLUTION CONTROL SYSTEM					
CARBON ADSORBER, TWO TOTAL (ONE STANDBY), 1000 LBS EACH, MULTIPLE SOURCES, ACTIVATED CARBON, ALSO CONTROLS VAPOR FROM API INLET BOX, INLET AND OUTLET CHANNELS A/N ~~325734~~ 502816 ~~† Permit to Construct Issued: 06/07/95~~ Permit to Construct Issued: TBD	C521	D338 D773 D339			D90.3, D94.1, E128.1, E153.2

COMPLIANCE RECORD REVIEW

A query of the AQMD Compliance Database for the past two years (3/15/08 to 3/15/10) identified 10 NOV's that were issued to the ConocoPhillips Carson Refinery (Facility ID 800362). A list of NOVs is provided in Table 2. NOV #P26968 was related to Process 9, System 1; however, the compliance database indicates that the equipment in Process 9, Systems 1 and 2 is currently in compliance with applicable rules and regulations.

Table 2. Two-Year History of ConocoPhillips NOVs

NOV#	Issue/ Violation Date	Status	Rule No.	Description	Pro	Sys
P48125	4/4/08 3/18/08	in com-pliance	1118(c)(1)(B), 401(b)(1)(B)	1) Discharge of air contaminants greater than 40% opacity into the atmosphere for more than three minutes in one hour. (2) Operation of flare with visible emissions for more than five minutes in a consecutive two hour period.		
P45638	5/28/08 5/27/08	Closed	402	Creating an odor nuisance that affected the public.		
P48717	8/28/08 8/21/08	in com-pliance	1173(d)(1)(B), (d)(1)(E); 1178(d)(4)(A)(iii)	1) Light service leaks in excess of 50,000 ppm - 11 counts; 2) open end at process line - 1 count; 3) Fixed roof tank opening not vapor tight as required by R1178.		
P48718	9/18/08 9/9/08	in com-pliance	402	Discharge of air contaminants or other material which cause injury, detriment or nuisance to a considerable number of persons.		
P48719	9/18/08 9/10/08	in com-pliance	41700	Discharge of air contaminants or other materials which cause injury, nuisance and detriment to a considerable amount of people.		
P48720	9/19/08 9/9/08	in com-pliance	1178(g) 2004(f), (i) 203(b)	From 9/9/08 T0 9/15/08 operating equipment not in good operating condition; Tank 42 roof partially submerged in violation; Tank 42 roof cover not closed as required; repairs required to be completed by 72 hrs of determination of noncompliance.	10	2
P52783	2/27/09 2/16/09	in com-pliance	463(e)(4) 203, 2004, 463 and Subpart Kb	Tank 2272 (D409) - Failure to comply with R463 within 72 hours of the determination of compliance.	10	2
P52784	2/27/09 2/17/09	in com-pliance	463(e)(4)	Tank 2286 (D415) Failure to comply with R463 within 72 hours of the determination of compliance.	10	2
P52832	1/30/09 4/1/08	in com-pliance	2004(q)	Failure to conduct modeling for 2007 compliance year when SOx emissions exceeded facility's initial allocation by 40 tons per year or more.		
P26968	**4/30/09 4/23/09**	**in com-pliance**	**2004(f)(1) 203(b)**	**1) Emissions greater than 500 ppm were found at API &DAF. 2) Failure to comply with administrative condition #2 of Sect. E. 3) Failure to change spent carbon with fresh activated carbon E153.**	**9**	**1**
P26971	3/5/10 3/16/09		1118(g)(5)(1)	The East Flare Monitoring System was down for greater than 76 hrs. March 2009.	14	1

FEE EVALUATION

The BCAT for the A/N 501261 permit unit is 294962 (Waste H2O Treating, >50,000 gpd), Schedule E. The Schedule E modification fee is $5148.93. The facility paid an additional fee of $2,574.47 for expedited permitting per 301(u)(1). All fees paid for A/N 501261 total $7,723.40. No additional fees are required for this permit application.

The BCAT for the A/N 502816 permit unit is 1B (Activated Carbon Adsorber Drum Vent m.s.), Schedule C. The Schedule C modification fee is $3,244.91 The facility paid an additional fee of $1,622.46 for expedited permitting per 301(u)(1). All fees paid for A/N 502816 total $4,867.37. No additional fees are required for this permit application.

BACKGROUND/HISTORY

The ConocoPhillips Carson Refinery is a Title V facility, as well as a NOx and SOx RECLAIM facility.

Permit applications 501261 and 502816 are modifications to the existing wastewater treatment system to connect the oil/water sump to a carbon canister control device. The objective of this permit evaluation is issue a permit to construct for the changes to the wastewater treatment system, and also to evaluate and incorporate administrative changes originally requested in separate applications. The administrative changes include adding existing retention tanks Dx, Dy, and Dz to the permit; changing the equipment ID for D813 from Tk-1603 to Tk-1611; removing the Rule 1176 VOC limit from C830; and changing the C719 and C720 diameters from 4 in to 10 in.

An engineering field evaluation was conducted at the ConocoPhillips Carson Refinery on December 4, 2008 to verify that the equipment described in Section H of the facility permit was installed and being operated according to the equipment description and permit conditions prior to issuing a Permit to Operate. Details on the site visit are provided in the field report dated 12/12/08. During the site visit, it was noted that the retention tanks upstream of the DAF units were not included in the permit, although they were present in previous Command & Control versions of the permit. Thus, the three retention tanks (DX, DY and DZ) associated with the three DAFs are being reinstated in the permit. Also, the equipment ID for D813 is being changed from Tk-1603 to TK-1611 at the facility's request. In addition, the Rule 1176 VOC limit is being removed from carbon canister C830 because emission limits are typically assigned to the basic equipment and not the control device. The dimensions of the scrubbers (C719 and C720) are being changed from 4 in dia to 10 in diameter. These dimensions are listed in the P&ID, and were verified during the 12/4/08 field evaluation.

While evaluating the compliance status of the individual pieces of equipment as part of the PC/PO conversion process for A/N's 325732 and 325734, a compliance issue was identified with regard to oil/water sump D339. Rule 1176 requires that fixed-roof sumps be routed to a control device. During the evaluation for the initial Title V permit, the facility suggested that the sump was controlled by an upstream carbon canister. A site visit was scheduled for 9/24/09 to inspect D339 and take samples, but the visit was cancelled when it was learned that the sump was out of service. On 10/15/09 the facility submitted A/N 502816 for carbon canister C521 and amended existing A/N 501261 to include connecting D339 to existing carbon canister C521. During a subsequent site visit on 12/1/09, it was explained that the facility initially believed it was possible for the vapors from the sump to vent to the upstream oil/water separator's carbon canister. Upon closer inspection, it was determined that this venting scheme was unlikely to occur in practice; thus, A/N 502816 was submitted to allow compliance with Rule 1176 requirements. The sump has not been returned to service since the compliance issue was identified.

A summary of the permitting history for the wastewater treatment system (Process 9, System 1) is provided in Table 3. A/N's 458289 and 447162 were consolidated with A/N 501261. A/N 458289 requested changes to the equipment description for D345. These changes were previously included in the 6/7/07 revision of the facility permit; no additional changes are needed. A/N 447162 originally requested that the scrubbers (control equipment) be renamed condensers and deemed basic equipment. After discussions with AQMD staff, the facility withdrew that request and the only part of A/N 447162 that remained was an administrative correction to the scrubber dimensions. A/N 453500 and 430041 were cancelled at the facility's request because the facility no longer wanted the requested changes.

The wastewater treatment system was originally constructed in 1955 (A/N 16230), and included two wastewater separator boxes with wood frames and asbestos paper covers. Each cover was replaced with steel double-deck single-seal floating roof after the covers were destroyed by fire, and for Rule 59 compliance. In 1961, the wastewater treatment system was rearranged to segregate oily wastewater from uncontaminated wastewater. In 1971, Two dissolved air flotation units (DAFs) were installed downstream of the wastewater separators, and a third DAF was added in 1972. In 1977, a new sump pump was installed. Seals and gaskets were added to the wastewater separator boxes for Rule 464 compliance in 1982. The wastewater separator boxes were replaced with three API oil-water separators in 1988, and controls (scrubbers and carbon canisters) were installed on the API separators in 1991. One of the three API separators was modified to become a pump structure/sump vented to two new carbon canisters in 1993, and other carbon canisters were installed to control the DAFs. In 1995, as part of an Order for Abatement related to pond replacement, additional equipment was vented to carbon canisters; also, the system's screens, API covers and API hatches were replaced. An additional line was vented to a carbon canister in 1995, and the oil/water sump is being connected to a carbon canister as part of this permit action in 2010.

Table 3. Permitting History for Wastewater Treatment System (P9S1)

A/N	Permit #/ status	Date issued	A/N type	A/N status	Facility ID	Description
501261			50	20	800362 Conoco Phillips	Modification to connect oil/water sump to carbon canisters (P9S2) Also: add existing retention vessels (listed in previous C&C permits), update DAF ID#, remove R1176 limit from C830, and change C719 & C720 dimensions from 4 in dia to 10 in dia.
458289			63	20	800362	Change of condition for D345 (P9S1) from sump to reservoir, remove concrete and skimmer, add capacity and dike dimensions. (changes included in 6/7/07 revision of Title V permit)
453500		-	60	52	800362	Change of condition to replace hydrocarbon w/ VOC in Conditions D90.1 & D90.3 (CANCELLED; no longer wanted)
447162		-	60	20	800362	Change of condition to update C719 & C720 dimensions from 4 in dia to 10 in dia; (originally requested C719 & C720 description change from scrubbers to condensers, but withdrew that request). (CONSOLIDATED with A/N 501261)
430041		-	50	52	800362	Modification to divert wastewater exhaust stream to afterburner rather than carbon canisters (CANCELLED; no longer wanted)
325732		4/10/97	40	26	800362	Change of ownership from Unocal to ConocoPhillips/Tosco
306345		8/31/95	20	51	88892 Unocal	Modification to add a vapor vent line from the API inlet to the vapor recovery system
303123		6/7/95	50	50	88892 Unocal	Modification to add vapor vent lines to vapor recovery; replace screens, and API in/out covers and hatches (part of Order for Abatement associated with Emergency Variance No. 269-178, Short Variance 269-182, & Regular Variance 269-142 for pond replacement)
287257		1/21/94	50	50	88892 Unocal	Modification to add polymer injection system to increase precipitation rate of undissolved solids and oil (CANCELLED; not completed--project abandoned)

A/N	Permit #/ status	Date issued	A/N type	A/N status	Facility ID	Description
281354		8/30/93	50	50	89787 Unocal	Modification to convert API No. 3 to a pump structure, and vent to two new carbon canisters. Replace process water pond; also add new pumps. Vent DAFs to new carbon canisters and remove reference to thermal oxidizer from A/N 242983 for Rule1176 compliance. (Related A/N 281355 changed service of tank from gasoline to wastewater--to replace uncovered pond, A/N 283415 created new P9S2 for new 1000-lb carbon canisters.
257935	~~*D89284 inact_NR*~~	12/11/91	10	31	88892 Unocal	Change of ownership from Shell to Unocal, description same as A/N 242983 (Note: status shown in CLASS system as PO issued, but a PO was never issued for this A/N)
242983		4/12/91	50	50	20539 Shell	Modification to vent three DAF units into a thermal oxidizer and to install two new backup carbon canisters for the DAF for Rule 1176 compliance (CANCELLED; not completed--project abandoned for safety reasons)
227793		2/20/91	50	50	20539 Shell	Installation of scrubber/packed tower & carbon adsorber on each API separator, replacement/addition of pumps and tanks for automated polymer, acid and caustic soda addition for separation improvements.
142614	D01891 Inactive	8/16/88	30	31	20539 Shell	Modification to replace two separator boxes with three API oil-water separators.
C22992	M24834 Inactive	5/10/82			Shell	Modification to add seals and gaskets to separator boxes for Rule 464 compliance.
C03248	M01643 Inactive	11/21/77			Shell	Modification to add new sump pump
A73378	P53978 Inactive	10/5/72 (PC)			Shell	Modification to add one dissolved air flotation unit.
A66993	P49097 Inactive	7/15/71 (PC)			Shell	Modification to add 2 dissolved air flotation units.
A10313	A10803 Inactive	1/5/61 (PC)			Shell	Modification to segregate chemical wastewater from uncontaminated wastewater.
A997	A01857 Inactive	10/1/57 (PC)			Shell	Modification to replace roof with steel double-deck single seal floating roof (after fire burned old roof), and for Rule 59 compliance.
16230	-	1/5/55			Shell	Construction of 2 wastewater separator boxes with wood frame and asbestos paper cover; each box with funnel skimmers.

A summary of the permitting history for the carbon canisters (C521; Process 9, System 2) is provided in Table 4. This carbon canister was installed for Rule 1176 compliance in 1993. Additional components were vented to this carbon canister system in 1995. This permit action will allow the connection of the oil/water sump to this device in 2010.

Table 4. Permitting History for Wastewater Treatment Air Pollution Control System (P9S2)

A/N	Permit #	Date PC issued	A/N type	A/N status	Facility ID	Description
502816			50	20	800362	Modification to connect oil/water sump to this control device.
453501	-	-	60	20	800362	Change of condition to replace hydrocarbon w/ VOC in Condition D90.3 (CANCELLED; no longer wanted)

A/N	Permit #	Date PC issued	A/N type	A/N status	Facility ID	Description
325734	-	4/10/97	40	26	800362	Change of ownership from Unocal to ConocoPhillips/Tosco
303126	-	6/7/95	20	51	88892 Unocal	Modification to add vapor venting line to carbon adsorber and add vapor path from inlet box and inlet channel of wastewater treatment system (part of Order for Abatement associated with Emergency Variance No. 269-178 and Short Variance 269-182 (Regular Variance 269-142 for pond replacement)
283415	-	8/30/93	10	50	88892	Original construction of new carbon adsorbers (1176 compliance) at API #3 exhaust (see A/N's 281354, 281355)

PROCESS DESCRIPTION

Based on information provided by the facility in AQMD files, a simplified process flow diagram was developed to illustrate the interconnections of the equipment in the P9S1 wastewater treatment system (Figure 1). This permit unit includes both wastewater treatment and stormwater handling equipment. Associated storage tanks and a carbon canister are shown, and identified as part of other permit units.

The stormwater handling equipment includes stormwater reservoir D345, a Dissolved Air Flotation Unit (DAF) D813, with its associated upstream retention tank (DZ). Stormwater Sump D341 routes stormwater to the LA County Sanitation District.

The primary wastewater treatment system routes wastewater to the two parallel API separators (D336 D337), which generate separate streams of

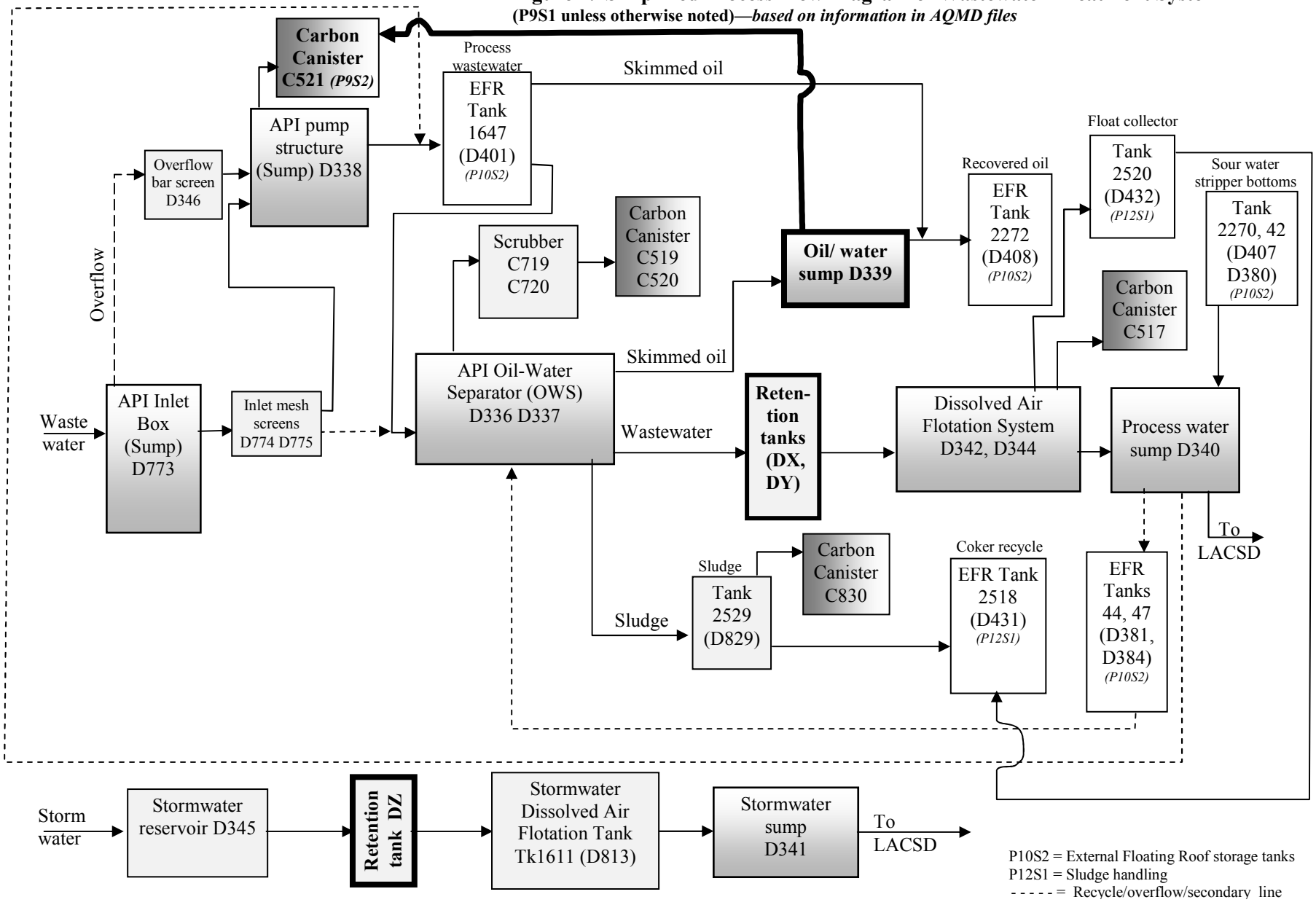
1) skimmed oil (routed to storage tank D408);
2) sludge (routed to the sludge handling system via process tank D829); and
3) wastewater.

The wastewater is then routed to the parallel dissolved air flotation (DAF) tanks (D342 D344) via two retention tanks (DX DY). From the DAFs, the 'float' is routed to the sludge handling system, and the treated water is either sent for storage and possible re-processing, or routed to the LA County Sanitation District via sump D340.

During periods of increased wastewater generation, excess wastewater is routed to the API pump structure (D338) and stored in Tank D401 before it is returned to the API separators for treatment.

Carbon canisters are used to control emissions from the API pump structure (sump), API OWS, sludge tank and DAF tanks. Process water sump D340 does not require control because it is used for treated wastewater prior to discharge and continuously has a VOC concentration below 5 mg/L, verified by testing. This permit action is modifying the wastewater treatment system to connect oil/water sump D339 to carbon canister C521 for emission control.

Figure 1. Simplified Process Flow Diagram of Wastewater Treatment System
(P9S1 unless otherwise noted)—*based on information in AQMD files*



EMISSIONS

The modifications to the permit (connecting the sump to a carbon canister) will cause no increase in emissions, and may reduce emissions slightly. The proposed administrative revisions to the permit have no impact on emissions. Thus, the emissions are essentially unchanged from those described in the previous PC applications.

The original wastewater treatment system was installed in 1955. Modifications made since 1955 have been improvements to the system that did not result in emission increases. The NSR emission baseline potential-to-emit (PTE) has not been established. For NSR accounting purposes, emissions are being calculated for this application to establish the NSR baseline emission level. This baseline is calculated as the maximum PTE for the system. Emissions from this system include both the emissions associated with the wastewater treatment system equipment and fugitive emissions. Emissions from fugitive components are calculated using recent fugitive component counts and the CAPCOA-revised 1995 EPA Correlation Equations (see Table 5 footnote). Emissions from system equipment are calculated using the system's wastewater treatment capacity along with EPA's AP-42 emission factor, which is the same as the AQMD AER default emission factor for oil-water separator systems.

No changes made to the system have changed the system capacity since the current API separators were originally installed in 1988 (A/N 142614) as replacements for the wastewater separator boxes. The wastewater treatment system capacity is limited by the LA County Sanitation District Industrial Wastewater Discharge Permit No. 016409 (dated 12/15/09), which imposes a 5-minute Peak Flow Limit of 5000 gpm. Thus, 5000 gpm is used as the maximum wastewater treatment capacity for the calculation of maximum PTE for the wastewater treatment system.

The best available emission factor for wastewater treatment system emissions is the AP-42 controlled emission factor of 0.2 lb/1000 gal. This is equivalent to the AER default annual emission factor of 73 lb/(1000 gal/day) (note that 0.2*365=73) [see AQMD AER Form R5 default emission factors]. This emission factor is from the 1995 revision of AP-42 and was given an emission factor rating of "D". Table 5.1-2 of AP-42, 1/95 revision, also gives an uncontrolled emission factor of 5 lb/1000 gal wastewater. The applicable control technology is noted as covered separators and/or vapor recovery systems. The emission factor assumes that oil/water separators (API separators in this case) are the primary source of emissions and does not separately account for emissions from other equipment such as pump structures or DAFs. The emission factor is for fugitive emissions (due to evaporation of leaked or spilled petroleum liquids and gases) from oil-water separators. In the years since the API separators were installed, improvements have been made to the system to reduce emissions, yet the default emission factor is still in use and makes no allowances for changes such as the installation of carbon canisters and scrubbers on the API separators, the use of DAFs controlled with carbon canisters, or installation of enhancements in the vapor path to these control devices from other emission sources in the wastewater treatment system.

The primary contributions to emissions from the wastewater treatment system are from fugitive components and process equipment.

Fugitive components are monitored according to the facility's approved Rule 1173 plan. Details on the component counts and associated emissions are provided in Table 5. Fugitive emissions from the wastewater treatment system were calculated as 39.87 lb/day (1.66 lb/hr) VOC.

The equipment in the wastewater treatment plant is also a source of emissions. Note that equipment exclusively handling stormwater is exempt from Rule 1176 requirements; these components are not expected to contribute to VOC emissions. The oil-water separator system, which includes the API separators and associated equipment, is a closed and covered system, but some equipment has atmospheric process vents. Atmospheric vents on process equipment are controlled with carbon canisters per Rule 1176, 40CFR63 Subpart CC and/or 40CFR60 Subpart GGG requirements. Rule 1176 requires that all air pollution control devices (APCDs) achieve a control efficiency of at least 95% by weight.

Table 5. Calculation of Fugitive VOC Emissions from Wastewater Treatment System (P9S1)

Source Unit		Service	*Emission Factor*** *(lb/yr / # of components)*	# of Components	Emissions (lb/yr)
Valves	Sealed bellows	All	0	76	0
	SCAQMD approved I&M Program	Gas/Vapor	4.55	20	91
		Light Liquid	4.55	335	1523
		Heavy Liquid	4.55		
		> 8 inches	4.55		
Pumps	Sealless type	Light Liquid	0		
	Double mech. seals or equiv.	Heavy Liquid	46.83		
	Single mech.seals	Light Liquid	17.21	17	293
Flanges (ANSI 16.5-1988)		All	6.99	480	3355
Compressors		Gas/Vapor	9.09*		
Pressure Relief Valves		All		16	145
Process Drains with P-trap or seal pot		All			
Other*		All		1006	9144
			Fugitive Emissions (lb/yr)		14551
			Fugitive Emissions (lb/day)		39.87
			Fugitive Emissions (lb/hr)		1.66

**Other includes instruments, loading arms, pressure relief valves, vents, compressors, dump lever arms, diaphragms, drains, hatches, meters, and polished rods stuffing boxes.*

* Emission Factors from "CAPCOA-Revised 1995 EPA Correlation Equations and Factors for Refineries and Marketing Terminals" California Implementation Guidelines for Estimating Mass Emissions of Fugitive Hydrocarbon Leaks at Petroleum Facilities, CAPCOA/ARB, February 1999. (Table IV-3a from AQMD Guidelines for Fugitive Emissions Calculations, June 2003)

The oil-water separator system has a total capacity of 5000 gallons per minute (7,200,000 gal/day) and includes emissions controls (covered and sealed sumps and equipment vented to scrubbers and/or carbon canisters). As described above, the controlled ROG (VOC) default emission factor for annual emissions from oil-water separator systems is 73 lb/(1000 gal/day) (see AQMD AER Form R5 default emission factors).

The potential-to-emit (PTE) is equal to: Wastewater treatment capacity * annual emission factor (controlled) or

7200 *[1000 gal/day]* * 73 *[lb/1000 gal/day]* = 525,600 *lb/yr* (1440 *lb/day*) VOC

The combined baseline PTE emissions from equipment and fugitives are 40 + 1440 = 1480 lb/day VOC (61.66 lb/hr VOC).

RULES EVALUATION

PART 1: SCAQMD REGULATIONS

Rule 212 Standards for Approving and Issuing Public Notice (Amended 11/14/97)

Rule 212 requires public notice for any new or modified permit unit, RECLAIM source or Title V equipment that increases emissions of toxic air contaminants and increases health risk as specified in 212(c)(1) - (c)(3). No emission increase is anticipated for this permit modification; thus, public notice is not required.

Rule 401 Visible Emissions (Amended 11/09/01)

Operation of this permit unit is not expected to result in visible emissions. Therefore, compliance with this rule is expected.

Rule 402 Nuisance (Adopted 05/07/76)

Operation of this permit unit is not expected to result in a public nuisance. Therefore, compliance with this rule is expected.

Rule 463 Organic Liquid Storage (Amended 05/06/05)

Rule 463 requirements do not apply the vessels in this permit unit because they are used as part of the wastewater treatment process, and not for storage of organic liquids.

Rule 464 Wastewater Separators (Amended 12/07/90)

Rule 464 requirements apply to the wastewater separators in the wastewater treatment system. The wastewater separators (APIs and DAFs) are each equipped with a solid cover with all openings sealed, as required. Compliance with this rule is expected.

Rule 1173 Control of Volatile Organic Compound Leaks and Releases from Components at Petroleum Facilities and Chemical Plants (Amended 06/01/07)

The miscellaneous fugitive components of P9S1 are subject to Rule 1173 per Condition H23.1. The facility has an approved Inspection and Maintenance (I&M) program for monitoring and repairing fugitive components. All new and existing fugitive components are tagged with Rule 1173 and are monitored according to ConocoPhillips' Rule 1173 leak detection and repair plan. Compliance with this rule is expected.

Rule 1176 VOC Emissions from Wastewater Systems (Amended 09/13/96)

The wastewater treatment system is subject to the requirements of Rule 1176 per System Condition S13.6. Carbon canisters are used as control devices on equipment in the wastewater treatment system to comply with Rule 1176 requirements. Conditions D90.1 and D90.3 require daily monitoring of the VOC at the outlet of the carbon canisters and Condition E153.2 requires changeout of the carbon canisters when VOC concentration of the gas exiting the canisters exceeds 500 ppm VOC.

All sumps and wastewater separators are required to have either: a) a floating cover equipped with seals, b) a fixed cover with a closed vent system vented to an air pollution control device (APCD), or c) an alternate control measure approved in writing by the Executive Officer [1176(e)(2)(A)]. The APCDs are required to achieve $\geq$ 95% VOC control efficiency by weight, or are not allowed to emit VOC emissions > 500 ppm above background [1176(e)(6)]. The oil/water separators (APIs D336 & D337 and DAFs D342 & D344), sumps (D338 & D773), and sludge tank (D829) are tagged with the Rule 1176 emission limit of 500 ppm VOC. Emission limits are typically associated with the basic equipment and not the control devices. Thus, this emission limit is being removed from sludge tank carbon canister C830. Conditions D90.1 and D90.3 require daily monitoring of carbon canister outlet concentrations.

The five carbon canisters used to control wastewater treatment plant emissions are:

- C521 (control for API pump structure D338, API inlet box /sump D773, and oil/water sump D339) *note that C521 is a separate permit unit described in P9S2*
- C519 (control for API OWS D336)
- C520 (control for API OWS D337)
- C830 (control for sludge tank D829)
- C517 (control for DAFs D342 & D344)

The equipment that exclusively handles stormwater is exempt from Rule 1176 requirements per 1176(i)(5)(G). This includes devices D345, DZ, D813 and D341. Wastewater treatment systems with inlet VOC concentrations less than 5 mg/L at all times are exempt from Rule 1176 requirements per 1176(i)(5)(J), provided they collect samples to demonstrate VOC content. Sump D340 is located downstream of the oil/water separators and contains treated stormwater just prior to the LACSD discharge point. The VOC content of the water in this sump has been tested at AQMD's request in the past, and was verified to contain less than 5 mg/L VOC.

Reg XIII New Source Review (Amended 12/06/02)

New Source Review requirements apply to new, modified or relocated sources. There is no emission increase associated with this modification; thus, BACT, offsets, and modeling are not required.

Reg XIV Toxics and Other Non-Criteria Pollutants

Rule 1401: New Source Review of Toxic Air Contaminants (Amended 03/07/08)

Rule 1401 applies to new, modified or relocated permit units that emit Toxic Air Contaminants (TAC). There is no emission increase associated with this permit modification; thus, no additional requirements apply.

Reg XXX Title V Permits (Amended 03/16/01)

ConocoPhillips was issued a final Title V operating permit on 11/7/08. This application is classified as an minor permit revision as defined in 3000(b)(12)(A). Minor permit revisions are exempt from public participation per 3006(b) but are required to be submitted to the EPA per 3003(j)(1)(A).

PART II: STATE REGULATIONS

CEQA California Environmental Quality Act (Amended 01/01/05)

This project does not trigger CEQA and is exempt from further CEQA action since it does not have the potential to generate significant adverse environmental impacts.

PART III: FEDERAL REGULATIONS

40CFR60 Subpart QQQ Standards of Performance for VOC Emissions from Petroleum Refinery Wastewater Systems (Amended 10/17/00)

Per Condition H23.13, the oil/water separators (D336 & D337), sumps (D338, D339, D773) and drain components (D887) are subject to the requirements of 40CFR63 Subpart QQQ.

Sumps are not specifically mentioned in Subpart QQQ, but are assumed to be auxiliary equipment subject to the requirements for oil-water separators. Subpart QQQ requires that oil-water separators and auxiliary equipment use either a fixed roof that is purged only to a control device; or a floating roof with seal requirements specified in §60.693-2. None of the equipment subject to Subpart QQQ in this facility is equipped with a floating roof.

Equipment with the capacity to treat more than 250 gpm of wastewater are required to be operated with a closed vent system vented to a control device with ≥ 95% VOC control efficiency and are not allowed to emit VOC emissions > 500 ppm above background [§60.692-5(e)(1)]. This 500 ppm VOC limit is tagged to oil/water separators D336 and D337 as well as sump pump structure D338. Carbon canisters that are not regenerated on-site are to be monitored on a daily basis per §60.695(a)(3)(ii)] and replaced as needed. Conditions D90.1 and D90.3 require daily monitoring of carbon canisters.

Sump D339 is used for handling slop oil, defined in Subpart QQQ as the floating oil and solids that accumulate on the surface of an oil-water separator. Slop oil facilities are included in the definition of oil-water separator. §60.692-3(e) specifies that slop oil shall be collected and transported in an enclosed system, and that slop oil handling equipment be equipped with a fixed roof that is not purged unless the vapor is directed to a control device [§60.692-3(a)(2)]. As part of this permit action, D339 is being vented to carbon canister C521. The facility is currently in compliance with this regulation and is expected to continue to operate in compliance with this regulation.

40CFR61 Subpart FF National Emission Standard for Benzene Waste Operations (Amended 12/4/03)

This facility is required to identify benzene-containing streams and limit the amount of uncontrolled benzene emitted. The Consent Decree (Section H, Paragraph 212) requires that the facility sample End-of-Line streams and other streams with significant contributions to total annual benzene (TAB) in accordance with the "Benzene Waste Operations Revised Sampling Plan (6BQ Compliance Option)" dated 5/19/09. Sampling results were provided in the Consent Decree Semiannual Progress Report (January 2010). The 'API Inlet Pump Structure' is one of the End-of-Line sampling points. The quarterly BWON report dated 1/18/10 indicates that the facility is projected to emit less than the 6 Mg/yr limit of uncontrolled benzene. The facility is currently in compliance with this regulation and is expected to continue to operate in compliance with this regulation.

40CFR63 Subpart CC National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries (Amended 06/23/03)

The Subpart CC provisions for miscellaneous process vents are included in §63.643 -§63.645. The definition of miscellaneous process vents specifies that emissions from wastewater collection and conveyance systems (wastewater drains, sewer vents, sump drains, etc.) are not considered miscellaneous process vents. [§63.641]

Subpart CC also has provisions for storage vessels [§63.646]. However, §63.641 of Subpart CC defines storage vessels as vessels used to store organic liquids and specifies that "Storage vessel does not include: . . .(3) Vessels with capacities smaller than 40 cubic meters; … (5) Wastewater storage tanks. Wastewater storage tanks are covered under the wastewater provisions." [§63.641] The retention tanks DX, DY and DZ each have capacities of 69 bbls (~11 cubic meters), and the API sludge tank (D829) has a capacity of 143 bbl (~23 cubic meters); thus, these vessels are not subject to Subpart CC requirements. The dedicated stormwater tanks are not subject to Subpart CC requirements because they are not used to store organic liquids.

Subpart CC wastewater provisions [§63.647] apply to all wastewater streams and treatment operations associated with refining process units that are a major source of HAPs and emit or contact HAPs. The oil/water separators (D336 & D337), sumps (D338, D773) and drain components (D887) are tagged with 40CFR63 Subpart CC requirements, detailed in Section J of the facility permit [40CFR63 Subpart CC, #2 6-23-2003]. For these Group 2 emission points, monitoring is required to ensure that they have not become Group 1 emission points. An AQMD permit is required to reclassify a Group 2 emission point as a Group 1 emission point. Note that Subpart CC requirements do not apply to stormwater from segregated stormwater sewers [§63.640(d)].

Subpart CC equipment leak provisions are in §63.648. However, the definition of Equipment leak in §63.641 states that vents from wastewater collection and conveyance systems (i.e. drains, sewer vents and

sump drains) are not equipment leaks. Thus, these provisions are not applicable to the wastewater treatment system.

The facility is currently in compliance with this regulation and is expected to continue to operate in compliance with this regulation.

RECOMMENDATIONS

Based on the above evaluation, it is recommended that the Permit to Construct be issued with the following conditions.

CONDITIONS

PROCESS CONDITIONS

P13.2 All devices under this process are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
HAPs	40CFR61, SUBPART	FF

[40CFR 61 Subpart FF, 12-4-2003]

[Processes subject to this condition : 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 18]

SYSTEM CONDITIONS

S13.6 All devices under this system are subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1176

[**RULE 1176, 9-13-1996**]

[Systems subject to this condition : Process 9, System 1, 3, 4, 5]

DEVICE CONDITIONS

C8.6 The operator shall use this equipment in such a manner that the flow rate being monitored, as indicated below, is not less than 2 gpm.

To comply with this condition, the operator shall install and maintain a(n) flow meter to accurately indicate the flow rate being supplied to the scrubber.

The operator shall determine and record the parameter being monitored once every 24 hours.

[**RULE 1176, 9-13-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997**]

[Devices subject to this condition : C719, C720]

D90.1 The operator shall periodically monitor the hydrocarbon concentration at the outlet of the carbon canister according to the following specifications:

The operator shall monitor once every day.

The operator shall use a diffusion sensor, or flame-ionization system, or an infra-red ionization system, or ultra-violet ionization system, or a District approved OVA, to monitor the parameter.

The operator shall calibrate the instrument used to monitor the parameter in ppmv methane.

[**RULE 1176, 9-13-1996; ~~RULE 1303(a)(1) BACT, 5-10-1996~~**; ~~RULE 1303(a)(1) BACT, 12-6-2002~~; **RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997**]

[Devices subject to this condition : C517]

Note that the BACT tag is being removed from Condition D90.1 because an investigation into the permitting history for C517 indicated that this device was installed for Rule 1176 compliance and has not been subsequently modified. Thus, the authority for this condition comes from Rule 1176 and Rule 3004(a)(4) only.

D90.3 The operator shall periodically monitor the hydrocarbon concentration at the outlet of the carbon canister according to the following specifications:

The operator shall monitor once every day.

The operator shall use a diffusion sensor, or flame-ionization system, or an infra-red ionization system, or ultra-violet ionization system, or a District approved OVA, to monitor the parameter.

The operator shall calibrate the instrument used to monitor the parameter in ppmv methane.

[**RULE 1176, 9-13-1996; RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997**]

[Devices subject to this condition : C519, C520, C521, C830]

D94.1 The operator shall install, maintain and operate a sampling line at the inlet and outlet of the carbon canisters to allow measurement of hydrocarbon concentration

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 1303(b)(2)-Offset, 5-10-1996**; RULE 1303(b)(2)-Offset, 12-6-2002]]

[Devices subject to this condition : C521]

E128.1 The operator shall keep all spent carbon in a tightly covered container which shall remain closed except when it is being transferred into or out of the container.

[**RULE 1303(a)(1)-BACT, 5-10-1996;** RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C517, C519, C520, C521, C728, C830]

E153.2 The operator shall change over the spent carbon with fresh activated carbon in the adsorber whenever breakthrough occurs.

For the purpose of this condition, breakthrough occurs when the hydrocarbon monitor reading indicates a concentration of 500 ppmv at the outlet of the carbon canister. (The 500 ppmv refers to VOCs).

[**RULE 1176, 9-13-1996; RULE 1303(a)(1)-BACT, 5-10-1996**; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997**]

[Devices subject to this condition : C517, C519, C520, C521,C728, C830]

H23.1 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1173

[**RULE 1173, 5-13-1994;** RULE 1173, 6-1-2007]

[Devices subject to this condition : D876, D877, D945]

H23.13 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	40CFR60, SUBPART	QQQ

[40CFR 60 Subpart QQQ, 10-17-2000]

[Devices subject to this condition : D336, D337, D338, D339, D773, D887]